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09/343,863	06/30/1999	WARREN S. BEITSCHER	10980689-1	8414

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EXAMINER

WISDAHL, ERIC D

ART UNIT	PAPER NUMBER
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2615

5

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/343,863

Applicant(s)

BEITSCHER, WARREN S.

Examiner

Eric D Wisdahl

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14 and 16-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,16-26 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 3 – 14 and 16 – 20 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amended Title is acceptable.

The currently amended claims have overcome the previous 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101 rejections.

It is noted that by applicant's failure to traverse the various official notices, such notices are found to be prior art.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the:

- **At least one additional high resolution sensor array** spanning a first dimension of said image plane, thereby providing a plurality of high resolution image sensor arrays, wherein said plurality of sensor arrays are moved through portions of said second dimension of said image plane to more rapidly complete image data acquisition at discrete intervals along the entirety of said image plane;
- Deploying a **plurality of said high resolution one dimensional sensor arrays** which span the first dimension of the image plane across said second dimension of said image plane and **Moving each sensor array** of said plurality of sensor arrays **through a portion of the second dimension** of the image plane, wherein each sensor

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array traverses a portion of the image plane **exclusive of at least one other sensor**

array of the plurality of sensor arrays;

- **Linearly moving each sensor array through a second dimension of said image plane thereby enabling acquisition of two dimensional image data across the entirety of said image plane;**
- Wherein the at least one sensor array comprises two sensor arrays and **first array is located at one end of the image plane and the second array is located in the middle of said image plane**, wherein the moving comprises moving the first array and the second array in the direction of the other end of the image plane at the same time and ceasing moving the first and second arrays when the first array is located in the middle of the image plane and the second array is located at the other end of the image plane;
- Wherein the at least one sensor array comprises two sensor arrays and **first array and the second array are located in the middle of said image plane**, wherein the moving comprises moving the first array in the direction of one end of the image plane and moving the second array in the direction of the other end of the image plane at the same time and ceasing moving the first and second arrays when the first array is located in the one end of the image plane and the second array is located at the other end of the image plane;
- **Converting light into digital image data is performed at different rates at different points during travel of said sensor along said second dimension of said image plane;**

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- Array has a **variable sampling rate**;
- **Changing the sampling rate** based upon a characteristic of the two dimensional image data;
- **Increasing the sampling rate** to process said image data with increased resolution;
- **Changing the sampling rate** for at least one point along the image plane;
- Sensor array may be **moved at variable velocity**; and
- **Increasing the variable velocity** to accurately process the dynamically changing image

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 30 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 30 and 31 recites the limitation "the at least one sensor array" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21 and 29 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mutze (DE 4100400 A1).

Regarding Claim 21, Mutze discloses the method comprising the steps of:

- Directing light from a remotely located image towards an image plane within the digital camera (inherent to direct light to the image plane, Figure 2 item 25),
 - Wherein the image plane is a two-dimensional space in said camera toward which light from said image is directed (Figure 2 item 25),
- Providing a high resolution one dimensional sensor array which spans the first dimension of the image plane across (Figure 2 items 16 – 20);
- Moving the sensor array through a portion of the second dimension of the image plane (Figure 2 items 16 – 20, show the parts needed to move the moving line sensor through the second dimension);
- Collecting sampling data samples from the light received by the sensor at a sampling rate (Translation Page 7, “Then the electronic image is taken. The CCD line sensor is displaced in a translational movement over the image field by the motor-operated displacement device as the distribution of light in the image plane

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is being scanned. The signals transmitted by the scanning electronics are digitalized in the accessory device, and they are transmitted by means of a suitable interface, for example, to a personal computer”);

- Processing the data samples into two dimensional image data (Translation Page 7, see above).

Regarding Claim 29, Mutze discloses:

- Said image plane comprises a long dimension and a short dimension and said sensor array spans said short dimension and is moved across the length of the long direction (Figure 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 – 6, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mutze (DE 4100400 A1) in view of Stern et al. (U.S. Patent 6, 370, 339).

Regarding Claim 1, Mutze discloses:

- Two-dimensional image plane (Figure 2 item 25);
- High-resolution image sensor spanning a first dimension (Figures 1 and 2 item 20);

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- Actuator for moving the high-resolution image sensor through a second dimension of the image plane (Figures 1 and 2 items 16 – 19);
 - While sensor array acquires image data at discrete distance intervals of said second dimension, thereby enabling camera to acquire image data at discrete intervals along an entirety of said image plane.

Mutze fails to specifically disclose:

- A control board for receiving said image data from said sensor array;

Stern teaches:

- A control board for receiving said image data from said sensor array (Figures 1 and 2, Column 4 lines 29 – 67, Column 6 lines 6 – 29);

Such an arrangement would be beneficial in providing a self contained unit.

Therefore, it would have been obvious to one of ordinary skill in the art to include the control board for receiving image data from said sensor array so as to provide a self contained unit.

Regarding Claim 3, Mutze discloses:

- Image is remotely located from said camera (image is picked up by the photographic reflex camera, “Spiegelreflexkamera” and would thus, inherently be remotely located for the camera);

Regarding Claim 4, Mutze discloses:

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- Image changes with time (image is picked up by the photographic reflex camera, “Spiegelreflexkamera” and would thus, inherently change with time);

Regarding Claim 5, Mutze discloses:

- Sensor array comprises a charge coupled device (Abstract “CCD-Zeilensensor 20”);

Regarding Claim 6, Mutze discloses:

- Using between 10 – 1000 pixel values in an evaluation of a single reading of the image sensor (Column 3 line 54 – Column 4 line 9).

Mutze fails to specifically disclose:

- CCD comprises more than 1000 pixels;

OFFICIAL NOTICE:

- CCD line sensor comprising more than 1000 pixels is well known within the art.

Such an arrangement of using a CCD line sensor with more than 1000 pixels would be advantageous in providing sufficient resolution in the first dimension of the image.

Therefore, it would have been obvious to include the CCD line sensor with more than 1000 pixels so as to provide sufficient resolution in the first dimension of the image.

Regarding Claim 9, Mutze discloses:

- Rotary actuator for rotating the sensor array through the second dimension of said image plane (Figure 2 items 16 – 19, causes the image sensor within the carriage,

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or saddle, to move linearly along the second dimension through the use of the motor, spindle, saddle and rails by rotating the spindle through the force created by the motor, the spindle causing the carriage to move linearly along the second dimension),

- Wherein the rotation enables the sensor array to acquire image data at closely spaced intervals across the entirety of the image plane (see above).

Regarding Claim 10, Mutze discloses:

- Said sensor array and actuator are part of a package that has been retrofitted into the digital camera (abstract, Column 2 lines 14 – 22).

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Stern et al. (U.S. Patent 6, 370, 339) in further view of Kimura (U.S. Patent 5, 721, 626).

Regarding Claim 7, Mutze discloses:

- Substantially straight line sensor array spanning the first dimension of said image plane (Figure 2, item 20);

Mutze fails to specifically disclose:

- Linear actuator for moving said substantially straight line actuator (read: substantially straight line sensor) linearly along the second dimension of said image plane;

Kimura teaches:

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- Substantially straight line sensor array spanning the first dimension of said image plane (Figure 3 item 23);
- Linear actuator for moving said substantially straight line sensor array linearly along the second dimension of said image plane (Figure 3 items 25 – 31, Column 2 lines 21 – 52, Column 3 lines 43 - 67);

Such an arrangement would be advantageous in providing a simple control using a stepping motor for high quality image reading with a finely adjustable timing system.

Therefore, it would have been obvious to include the linear actuator for moving said substantially straight line actuator (read: substantially straight line sensor) linearly along the second dimension of said image plane so as to provide an improved timing system capable of producing high quality images.

Regarding Claim 8, Kimura teaches:

- Electric motor (Figure 3 item 27);
- Belt and pulley system (Figure 3 items 25, 26 and 28 – 31).

Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Stern et al. (U.S. Patent 6, 370, 339) in view of Kawamoto et al. (U.S. Patent 5, 920, 063).

Regarding Claim 11, Stern and Mutze fail to disclose:

- At least one more (i.e. two or more) high resolution sensor array spanning a first dimension of said image plane;

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- Thereby providing a plurality of high resolution sensor arrays, wherein said plurality of sensor arrays are moved through portions of said second dimension of said image plane to more rapidly complete image data acquisition at discrete intervals along the entirety of said image plane.

Kawamoto teaches:

- At least one more (i.e. two or more) high resolution sensor array spanning a first dimension of said image plane (Column 1 lines 41 – 52);
 - Thereby providing a plurality of high resolution sensor arrays, wherein said plurality of sensor arrays are moved through portions of said second dimension of said image plane to more rapidly complete image data acquisition at discrete intervals along the entirety of said image plane.

Such an arrangement would be advantageous in providing an image sensing device capable of sensing image information at a higher scanning speed and thus for a shorter time period.

Therefore, it would have been obvious to one of ordinary skill in the art to include the at least one more (i.e. two or more) high resolution sensor array spanning a first dimension of said image plane thereby providing a plurality of high resolution sensor arrays, wherein said plurality of sensor arrays are moved through portions of said second dimension of said image plane to more rapidly complete image data acquisition at discrete intervals along the entirety of said image plane so as to provide a higher scanning speed.

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Claims 12 – 14, 16 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Kawamoto et al. (U.S. Patent 5, 920, 063).

Regarding Claim 12, Mutze discloses the method comprising the steps of:

- Directing light from a remotely located image towards an image plane within the digital camera (inherent to direct light to the image plane, Figure 2 item 25),
 - Wherein the image plane is a two-dimensional space in said camera toward which light from said image is directed (Figure 2 item 25),
- Deploying a high resolution one dimensional sensor array which spans the first dimension of the image plane across said second dimension of said image plane (Figure 2 items 16 – 20, show the parts needed to move the moving line sensor through the second dimension);
- Converting the light received by said one-dimensional sensor array into digital image data acquired in two dimensions along the entirety of said image plane and generating two dimensional image data (accomplished using the CCD line sensor 20 moving through the image plane 25 through the use of the motor 16, spindle 17, saddle 18 and guide rails 19),

Mutze fails to specifically disclose:

- Deploying a plurality of said high resolution sensor arrays which span the first dimension of the image plane across said second dimension of the image plane;
- Moving each of said plurality of said high resolution sensor arrays through a portion of the second dimension of the image plane,

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- Wherein each sensor array traverses a portion of the image plane exclusive of at least one other sensor array of the plurality of said sensor arrays;

Kawamoto teaches:

- Deploying a plurality of said high resolution sensor arrays which span the first dimension of the image plane across said second dimension of the image plane (Column 1 lines 41 – 52);
- Moving each of said plurality of said high resolution sensor arrays through a portion of the second dimension of the image plane (Column 1 lines 41 – 52, Figures 2 – 4),
 - Wherein each sensor array traverses a portion of the image plane exclusive of at least one other sensor array of the plurality of said sensor arrays (Figures 2 – 4, For example Figure 2 line 1 will not be traversed by any other sensor array, line 2 will not be traversed by the third sensor array, the last line will not be traversed by either the first or second arrays...);

Such an arrangement would be advantageous in providing an image sensing device capable of sensing image information at a higher scanning speed and thus for a shorter time period.

Therefore, it would have been obvious to one of ordinary skill in the art to deploy a plurality of said high resolution sensor arrays which span the first dimension of the image plane across said second dimension of the image plane as well as move each of said plurality of said high resolution sensor arrays through a portion of the second dimension of the image plane wherein each sensor array traverses a portion of the image plane exclusive of at least one other

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sensor array of the plurality of said sensor arrays so as to provide a sensing device capable of sensing image information at a higher scanning speed and thus for a shorter time period.

Regarding Claim 13, Mutze discloses:

- Transmitting the digital image data to a storage device (Personal computer for storing or processing the image data, Column 3 lines 50 – 53 “personalcomputer”);

Regarding Claim 14, Mutze discloses:

- Remotely located image is a three dimensional image (image is picked up by the photographic reflex camera, “Spiegelreflexkamera” and would thus, inherently be a three dimensional image);

Regarding Claim 16, Mutze fails to specifically disclose (at least without the aid of the full translation) Digital image data comprising:

- Brightness information; and
- Color information.

Official Notice:

- Using Brightness and color information in digital image data is well known within the art for efficiently representing the incoming image data.

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Such an arrangement of providing brightness and color information would have been advantageous in presenting the incoming image data in a well known manner which is easy to process and store.

Therefore, it would have been obvious to one of ordinary skill in the art to include the digital image data comprising brightness information and color information so as to efficiently represent the incoming image data.

Regarding Claim 17, Mutze discloses:

- Sensor array spans a linear dimension of said image plane (Figures 1 and 2 item 20 and Figure 2 item 25)
- Step of moving comprises:
 - Linearly moving each of said sensor array through a second dimension of said image plane (Figure 2 items 16 – 19, causes the image sensor within the carriage, or saddle, to move linearly along the second dimension through the use of the motor, spindle, saddle and rails);
 - Thereby enabling acquisition of two dimensional image data across entirety of said image plane.

Regarding Claim 18, Mutze discloses:

- Sensor array spans a linear dimension of said image plane (Figures 1 and 2 items 20 and 25)
- Step of moving comprises:

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- Rotating each of said sensor array through a second dimension of said image plane (Figure 2 items 16 – 19, causes the image sensor within the carriage, or saddle, to move linearly along the second dimension through the use of the motor, spindle, saddle and rails by rotating the spindle through the force created by the motor, the spindle causing the carriage to move along the second dimension);
 - Thereby enabling acquisition of two dimensional image data across entirety of said image plane.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Kawamoto et al. (U.S. Patent 5, 920, 063) in further view of Deangelis et al. (U.S. Patent Publication 2002/0149679 A1).

Regarding Claim 19, Mutze and Kawamoto fail to disclose the step of moving comprising:

- Continuously moving each sensor array through the image plane thereby generating a sequence of digital still images in rapid succession enabling said digital camera to capture moving video image data.

Deangelis teaches:

- Continuously moving sensor array through the image plane thereby generating a sequence of digital still images in rapid succession enabling said digital camera to capture moving video image data (paragraph [0014], [0016]).

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Such an arrangement would be useful in generating video image data as an alternate form of image data capture for recording events in a sequence of data to be played back as video image data or shown as a frame by frame still image.

Therefore, it would have been obvious to one of ordinary skill in the art to include the step of Continuously moving sensor array through the image plane thereby generating a sequence of digital still images in rapid succession enabling said digital camera to capture moving video image data so as to provide the option of recording video image data in addition to still image data.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Kawamoto et al. (U.S. Patent 5, 920, 063) in further view of Kimura (U.S. Patent 5, 721, 626) in further view of Shimizu et al. (U.S. Patent 4, 579, 122).

Regarding Claim 20, Mutze fails to disclose:

- Converting light into digital image data performed at different rates at different points during travel of the sensor array along the second dimension of the image plane.

Kimura teaches:

- a driving system capable of switching the rate at which the sensor array travels along the image plane and a corresponding exposure time (Column 2 line 21 – Column 4 line 62).

Such an arrangement would be useful in allowing the driving time for driving the image sensor along the image plane to be adjusted.

Shimizu teaches:

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- data acquisition near the center of the image is most important, as well as, scanning the image at the center more slowly than at the edges to improve the resolution of the data at the center of the image (Column 1 lines 52 – 53, Column 1 line 63 – Column 2 line 2).

Such an arrangement would be useful in providing more data in the center of the image and would thus require a change of exposure time according to the rate of travel along the second dimension of the image plane.

Therefore, it would have been obvious to one of ordinary skill in the art to include the step of converting light into digital image data performed at different rates at different points during travel of the sensor array along the second dimension of the image plane so as to provide more information at the center of the image.

Claims 22 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Kimura (U.S. Patent 5, 721, 626) in further view of Shimizu et al. (U.S. Patent 4, 579, 122).

Regarding Claim 22, see examiners notes Claim 20.

Regarding Claim 23, see examiners notes Claim 20. Furthermore, the characteristic of the two dimensional digital image data that is considered is the location, i.e. that it is in the center of the image.

Regarding Claim 24, Kimura teaches:

- increasing the sampling rate to process image data with increased resolution (Column 2 line 21 – Column 4 line 62).

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Regarding Claim 25, see examiners notes Claim 20.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1) in view of Kimura (U.S. Patent 5, 721, 626).

Regarding Claim 26, Mutze fails to disclose:

- the sensor array may be moved at a variable velocity.

Kimura teaches:

- a driving system capable of switching the rate at which the sensor array travels along the image plane and a corresponding exposure time (Column 2 line 21 – Column 4 line 62).

Such an arrangement would be useful in allowing the driving time for driving the image sensor along the image plane to be adjusted, thus allowing for an adjustment of resolution imaged.

Therefore, it would have obvious to one of ordinary skill in the art to include the sensor array which may be moved at a variable velocity so as to allow for a change in resolution.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutze (DE 4100400 A1).

Regarding Claim 28, Mutze discloses:

- Said image plane comprises a long dimension and a short dimension and said sensor array spans said short dimension and is moved across the length of the long direction (Figure 2).

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Mutze fails to disclose:

- Said sensor array spans said long dimension and is moved across the length of the short direction.

Such an arrangement is strictly design choice as the system will deal with the trade-off of cost vs. scanning time with respect to the arrangement of the main scanning line and the sub-scanning line.

Therefore, it would have been obvious to one of ordinary skill in the art to include the sensor array spanning the long dimension and moved across the length of the short direction if such a choice for decreased scanning time and increased cost is desired.

Allowable Subject Matter

Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 30 and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 27, the prior art fails to teach or suggest the following limitations:

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- **Increasing the variable velocity** to accurately process the dynamically changing image

For the closest art of reference, Mutze (DE 4100400 A1) in view of Kimura (U.S. Patent 5, 721, 626) in further view of Shimizu et al. (U.S. Patent 4, 579, 122), See examiners notes Claim 20 above.

Regarding Claim 30, the prior art fails to teach or fairly suggest the following limitations:

- Wherein the at least one sensor array comprises two sensor arrays and **first array is located at one end of the image plane and the second array is located in the middle of said image plane**, wherein the moving comprises **moving the first array and the second array in the direction of the other end of the image plane** at the same time and ceasing moving the first and second arrays when the first array is located in the middle of the image plane and the second array is located at the other end of the image plane;

For the closest art of reference, Mutze (DE 4100400 A1) in view of Kawamoto et al. (U.S. Patent 5, 920, 063), see examiners notes Claim 12 above.

Regarding Claim 31, the prior art fails to teach or fairly suggest the following limitations:

- Wherein the at least one sensor array comprises two sensor arrays and **first array and the second array are located in the middle of said image plane**, wherein the moving comprises **moving the first array in the direction of one end of the image plane and moving the second array in the direction of the other end of the image**

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plane at the same time and ceasing moving the first and second arrays when the first array is located in the one end of the image plane and the second array is located at the other end of the image plane;

For the closest art of reference, Mutze (DE 4100400 A1) in view of Kawamoto et al. (U.S. Patent 5, 920, 063), see examiners notes Claim 12 above.

It is noted that the drawing objections must be overcome for the subject matter to go to a state of allowance.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric D Wisdahl whose telephone number is (703) 305-4915. The examiner can normally be reached on 9:00 - 6:00 Mon-Thur every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5399 for regular communications and (703) 308-5399 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office which can be reached at telephone number (703) 306-0377.

edw
January 24, 2004



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600